reduced capacity for an inert material, colloidal carbon, and took up only 25% of the load absorbed by an untreated liver. Light microscopy revealed some focal degeneration in the blood vessels of silica-treated animals but the sinusoids remained unaffected except that the numbers of Kuppfer cells were markedly reduced. Scanning electron microscopy confirmed that the silica treatment had little effect on the structure of the capillaries and sinusoids. This evidence suggests that the silica pretreatment reduces the phagocytic properties of liver by specifically removing Kuppfer cells.

The uptake of sporozoites is significantly reduced in silica-treated livers (p 0·01 Mann Whitney) with only 59% of the original sporozoite load disappearing during the 15-min perfusion period. This finding suggests the Kuppfer cell is responsible for the clearance of sporozoites from the blood. However, it remains to be seen whether sporozoites taken up by Kuppfer cells are ultimately responsible for the production of exoerythrocytic schizonts.

Gastroduodenitis and peptic ulcer in a rural Liberian community—an endoscopic prospective study

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So far endoscopic investigations into the prevalence of oesophago-gastro-duodenal pathology in West Africa are few, and non-existent in Liberia. In a prospective study on a Liberian rubber plantation over 12 months, 77 patients with recurrent epigastric pain or suspicion of gastrointestinal bleeding as well as 15 controls without evidence of gastrointestinal disease were examined with an Olympus fibreoptic instrument. Biopsies were systematically taken from the antrum and the duodenum. Biopsy specimens were classified as having none, chronic superficial (SG) and atrophic gastritis (AG) and duodenitis (D) respectively (MACDONALD, W. C. & RUBIN, C. E., 1967; *Gastroenterology,* **53,** 143; CHELI, R. & ASTE, H., 1976; *Duodenitis*).

Peptic ulcer was found in six patients. Two of these were prepyloric and four in the duodenal bulb. From the symptomatic group 71% had macroscopic signs of gastritis, 14% of duodenitis, i.e. hyperaemia, oedema, patchy aspect and erosions compared to 27% and none in the controls. Histology revealed SG in 49%, AG in 25% and D in 30% of the patients and 33%, 13% and 7% respectively in the control group. There seemed to be a positive correlation between histological gastritis, symptoms and intake of pepper. No correlation was found with the presence of faecal parasites.

This study shows a relatively small number of peptic ulcer disease but a high prevalence of chronic gastritis in this rural population.

Toxoplasma gondii: glucose-6-phosphate-dehydrogenase

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Glucose-6-phosphate-dehydrogenase (G6PD) is the key enzyme that controls the glucose flow through the pentose-phosphate route. The importance of this route was demonstrated for a malaria parasite (SHAKESPEARE, P. G. & TRIGG, P. I., 1973; *Nature,* **241,** 538-540). Using the quantitative microgel-gradient technique combined with a specific histochemical assay (ENDOU, H. & NEUHOFF, V., 1975; *Chemie,* **356,** 1381-1396) we were able to analyse some of the kinetic and regulatory features of *Toxoplasma* G6PD. G6PD-activity was only found in the cytoplasm. The enzyme metabolizes not only glucose-6-phosphate (G6P) but also other substrates. The relative peak activities were 28·4% for galactose-6-phosphate (Gal6P), 0·0245% for gluconate-6-phosphate (Gluc6P) and 50·3% for NAD. The Michaelis-Menten values (Km-value) were evaluated. They were $3{\cdot}63 \times 10^{-4}$ M for G6P, $4{\cdot}34 \times 10^{-4}$ M for Gal6P, $3{\cdot}63 \times 10^{-2}$ M for Gluc6P and $1{\cdot}01 \times 10^{-5}$ M for NADP. In studying regulatory properties of G6PD the effect of ATP was assayed. ATP inhibited G6PD ($1{\cdot}52 \times 10^{-3}$ M). ATP as effector changed the hyperbolic Michaelis-Menten kinetic into a sigmoidal one in the mode of allosteric action.

Kinetic features in the case of the Km-values for G6P and NADP are similar to those of *Trypanosoma cruzi* (see FUNAYAMA, S. *et al.*, 1977; *Expl. Parasit.*, **43,** 376-381). However, unlike G6PD of *Trypanosoma,* the *Toxoplasma* enzyme can react with NAD as cosubstrate and exhibits allosteric features with ATP. This may indicate that the pentose-phosphate route plays a role in the glucose metabolism of *Toxoplasma gondii* similar to that in *Plasmodium.*